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CONCEPT FOR FLEXIBLE AND LEAN ORGANISATIONAL STRUCTURES AND PROCESSES – STRATEGIC INTERACTIONS WITH THE BUSINESS DEVELOPMENT



INHALT

Summary 394

1 Introduction 395

2 Preconditions..... 396

2.1 Siemens and LTSA Service Business..... 396

2.2 Main Trends and Core Challenge for the LTSA Business 397

2.3 Overall Project Objective 397

3 Implementation..... 398

3.1 Generic Approach 398

3.2 Objective and Strategies 400

3.3 Flexible and Lean Concept for Organisational Structures and Processes 402

3.4 Interaction with Business Development 411

4 Resume..... 412

4.1 Summary and Outlook for the Concept 412

4.2 Generalisation and Future Perspective 413

Appendix..... 415

SUMMARY

Siemens is one of the biggest and leading companies in the energy sector and the entire energy conversion chain worldwide. Its service business is a huge division with good future prospects. Nevertheless, the business is changing. Especially, the Long Term Service Agreement (LTSA), which covers mainly maintenance and additional sales for the main frames gas turbine, steam turbine and generator, is confronted with firstly the decreasing profitability of the business model of its customers and secondly increasing competition through commoditisation by price erosion, new innovations and an increased number of competitors. In order to make the best use of Siemens' strengths and the growing Chinese energy market, the MBA-Project has been set up with the aim of focusing on implementing flexible and lean organisational structures and processes as well as providing strategic advice of the LTSA business on gas turbines in China.

The MBA-Project has the overall objective to provide an answer to the following question for the example of LTSA implementation business in China: "How should a concept for flexible and lean organisational structures and processes be designed – and what would be the strategic interactions with the business development for the implementation?" For this purpose, the business development process was gone through in order to generate an overview of the endogenous and exogenous framework. The 13 strategies revealed have been drawn up to meet the overall project objectives. The following two strategies were selected for implementation.

- WO a. Flexible and lean team structure tailored for the Chinese business
- WO b. Flexible and lean processes tailored for the Chinese business

Pursuing these strategies, with the use of lean methodology and the pyramid structure for organisation, a concept for improved organisational structure and processes was created. This revealed that the current processes are not in line with customer demands and further job functions are necessary in order to gain financial cost savings as well as increased customer and employee satisfaction. However, the implementation of the concept has shown that organisational changes are a sensitive topic which can be allocated to an incremental instead of a radical change. For the business itself, the core challenge for the LTSA is to readjust the understanding that the service is a profitable and non-competitive business driven by fewer changes and convenience. Meanwhile pursuing operational excellence, e.g. driven by lean service management, would be an enabler.

1 INTRODUCTION

*„Better to trip up a little on new paths than to continue to walk safely
in the old paths“ (Chinese proverb, origin unknown, possibly Sun Zu)*

China is the third largest and the most populated country in the world. There are plenty of opportunities and challenges for everyone since the economy has made dramatic progress within the last 30 years. But to make the best use of it, it is necessary to find and try out new ways; otherwise it could easily lead to one walking in the same old ways. The question now arises, what are the new ways and how can one walk in them? This MBA-Project considers this intriguing proverb.¹

The title, as well as the introduction, has already given some hints as to the motivation of the project. First of all, there is the increasing hype around China. China is a country of many superlatives; there are more than 70 million members in the Chinese Communist Party, foreign exchange reserves are more than 3 trillion dollars, there are around 166 cities with more than one million residents, 181 million cars were sold in China in 2010, and so on². It doesn't make sense to mention them all. Nevertheless, there are other voices which make one think less positively. China's economy is slowing down, protectionism through the government exists, there are high amounts of overcapacity and real estate and credit bubbles are growing³. Despite this, John Naisbitt's book "China's Megatrends"⁴ and "On China"⁵ by Henry Kissinger assume that China is facing a bright future by achieving an outstanding position as probably the biggest economy in the world. Aside from this general fascination with China, there is always the key question about finding a suitable strategy for doing business in China, which is evidently a very complex challenge for western companies. The second main pillar of the project is the question, what roles do organisational structures and processes play in services in the industry sector in this consideration? In particular, the stationary large gas turbine business for fossil power plants has reached a certain point, where overcapacity and increased competition are forcing the original equipment manufacturers (OEM) to reduce their operational expenses. Applying the lean production theory to the service industry might provide a relevant contribution here in terms of operational excellence. In summary, the motivation for the project is driven by considering operational excellence through lean service management while drawing an "almost" complete big picture around the Chinese service business for gas turbines and the required strategies.

1 Cf. (Zailiang, 2013, pp. 4-10)

2 Cf. (Stutte, 2011)

3 Cf. (Böschén & Hirn, 2015, pp. 60-66)

4 (Naisbitt & Naisbitt, 2010)

5 (Kissinger, 2011)

2 PRECONDITIONS

2.1 SIEMENS AND LTSA SERVICE BUSINESS

Siemens AG is one of the leading companies in electronics and electrical engineering headquartered in Munich and Berlin. Siemens employs approx. 343,000 people across nearly 190 countries with revenues of approx. EUR 71.92 billion and a net income of approx. EUR 5.51 billion for the fiscal year 2014. It has a tensorstructure⁶ with 10 Divisions, 8 Cross Functional Departments as well as 30 main subsidiaries which report directly to the executive board. The current CEO of Siemens AG is Mr. Joe Kaeser.⁷

The Long-Term Service Agreement (LTSA) business, (within Siemens called Long Term Program business), is located within the Power Generation Services Division in the Power and Gas Business Unit of Siemens and covers the fossil service business for Siemens gas and steam fired power plants with long term maintenance contracts. The LTSA is one of four different Siemens Fossil Service concepts and usually provides maintenance for the main components of a power plant - the gas turbines (GT) (Figure 1), the steam turbines and the generators - at regularly-scheduled intervals to ensure the power plant's continuous operation. Such a service agreement is defined by years, e.g. 10 years and/or by equivalent operating hours, e.g. 50.000 equivalent operating hours. Non-maintenance activities, such as modifications, upgrades and technical improvements, are additionally offered during the whole implementation period of the LTSA contract by change orders or up-sells.

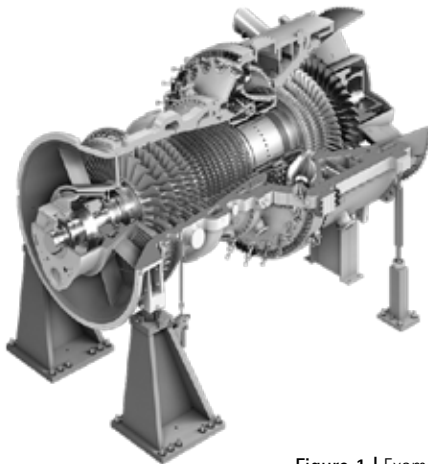


Figure 1 | Example of a Siemens gas turbine SGT5-4000F⁸

6 (Oelsnitz, 2009, p. 81)

7 Cf. (Siemens AG (ed.), 2014)

8 (Siemens AG, 2015)

The responsible implementation sub-segment is situated in Berlin and covers all countries except America. The implementation is delivered by a mixture of program and project methods which lead to interdisciplinary program- and project teams (matrix-project-organisation⁹).

2.2 MAIN TRENDS AND CORE CHALLENGE FOR THE LTSA BUSINESS

There are two main trends viewed from a GT-manufacturer perspective which have consequences. Firstly, the LTSA customer's business model is becoming uneconomical. This is mainly due to increased competition through distributed and renewable power generation technologies, the imbalance of fuel costs vs. electricity price, unfavourable political regulations and instabilities in certain countries. For instance, the power utility company EON is being divided into two organisations¹⁰. The mother company will remain as EON and include grid activities and renewable energy. The second part, called Uniper, will cover the fossil power generation plants. All in all, that results in a decline in the current world market demand for new large GT's from around 350 to less than 200 per year. The second main trend is that the GT technology, especially the service, is at a certain point of commoditisation (becoming a commodity). That means that several non-original OEM's are trying to enter the market. This leads to ongoing increased (price) competition, driven by overcapacity, for gas and steam fired power plants products as well as for services¹¹. Especially for China, the competition is increasing significantly through former joint venture partners who are turning into serious competitors¹². Based on that, the core challenge for the LTSA is to readjust the understanding that the service is a profitable and non-competitive business driven by fewer changes and convenience. It is essential that LTSA explores outside of its comfort zone by changing and adapting. Common proceedings are cost reduction programs through releasing staff, hiring freeze and increasing use of command and control through deliberate figure tracking. Meanwhile, increasing workloads could put growing pressure on organisations.

2.3 OVERALL PROJECT OBJECTIVE

The indicator of achievement for the overall objective is the description of some possible answers to the following question.

9 (Oelsnitz, 2009, p. 225)

10 Cf. (Boehmer, 2015, p. 47 f.)

11 Cf. (Giesen, 2015)

12 Cf. (Wu, 2015)

For the example of LTSA implementation business in China:

“How should a concept for flexible and lean organisational structures and processes be designed – and what would be the strategic interactions with the business development for the implementation?”

Essentially, the MBA-Project focuses on describing the internal situation and how it could be improved. Therefore it is considered to be a change project in respect of change management, several characteristics of which will apply. Hans Ulrich Streit describes in his article “Veränderung als Projekt” that adaption of the standard project management methods must apply. The adapted procedures are required due to the extremely important willingness of cooperation from the side of the work force, the poor measurability of objectives, the small data base, the intensive interaction with decision makers and the unforeseeable difficulties which may be met during implementation. What makes this different to a “daily business” project, is the essential need to convince and involve the affected employee in the change in order to gain their full support. This all influences the definition of project objectives as well. Streit emphasizes the reasons behind the goal (making it more transparent) rather than making the goals too exact or precise. The goals will continuously be specified during the change project in order to extrapolate more precise target values from the initial overall objective horizon. The SMART¹³ criteria do not play any decisive role¹⁴.

3 IMPLEMENTATION

3.1 GENERIC APPROACH

Basically, the generic approach to the project will follow the change process shown here.



Figure 2 | Process of change¹⁵

The Work Breakdown Structure (WBS) is a hierarchical top-down method that successively subdivides the work of the project into smaller details such as sub-projects, tasks, etc. A generic term for a unit within a WBS at the lowest level of its branch, not necessarily at the lowest level of the whole WBS, is the work package. Its purpose is to bundle services for specification, tender, bid,

¹³ (Drucker, 1954)

¹⁴ Cf. (Streit, 2013, p. 50 ff.)

¹⁵ Cf. (Baumöl, 2008, p. 82)

order, execution, settlement and make them easy to manage. It may be divided into activities. For creating such a model of the change project it is necessary to decide between the two different generic structures.

- object oriented (e.g. product, function and facilities) and
- phase oriented (e.g. tasks organized according to time) WBS¹⁶

Due to the fact that the process of change is phase oriented, the decision was made accordingly. To simplify and to ensure the overview two levels under the overall project are carried out. Further details were planned during the project progression.

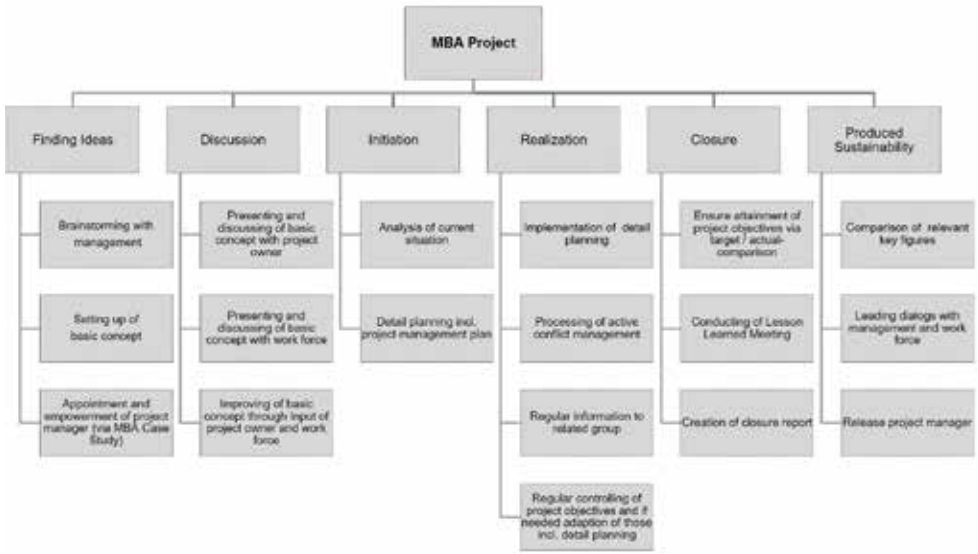


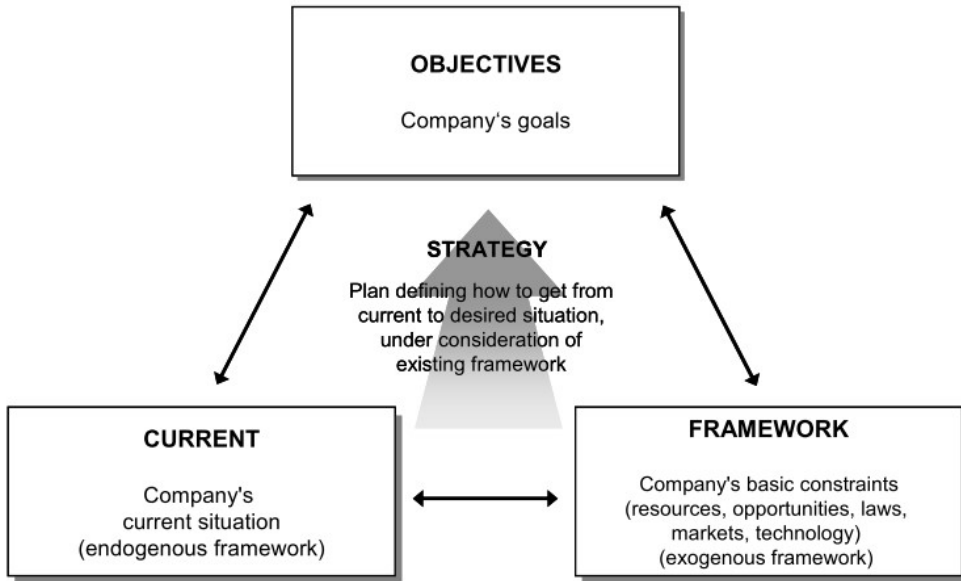
Figure 3 | WBS of MBA-Project¹⁷

16 Cf. (Corsten, Corsten, & Gössinger, 2008, p. 108 ff.)

17 (Schwappach, Own Figure for PSA 1, 2014)

3.2 OBJECTIVE AND STRATEGIES

In order to provide a common understanding of the LTSA Business, the strategic triangle of the business development process (Faix, et al., 2006) with reference to a selection of the assigned and categorized tools was used.



© Faix

Figure 4 | Strategic triangle of business development process¹⁸

Two workshops were held to compile the necessary data, information and to create the necessary analyses. The execution of analyses and the compiling of contents were done via a slightly-adapted brainstorming method also using theory and templates as well as several check-lists. First of all, the LTSA specific information was compiled to give a generic overview. The endogenous framework was considered by Stakeholder Value¹⁹ analysis. To generate a clear and detailed picture of the exogenous framework, the economic and political situation of the company was revealed by the general analysis of the business environment; and the framework of the company's current situation was revealed by the analysis of the business environment as related to the company. Thereafter, the strengths, weaknesses, opportunities and threats were defined²⁰. In order to identify the appropriate actions, strategies were derived out of the compiled informa-

¹⁸ (Steinbeis Hochschule Berlin (ed.), 2006, p. 2006)

¹⁹ (Freeman, 1984)

²⁰ Cf. (Kerth, Asum, & Stich, 2011, pp. 168-170)

tion and data by using the SWOT²¹ analysis. Because of this, the created output is based on facts, know-how, expectation and estimations. The contents of the analysis was compiled from aspects, using internal as well as external sources. In order to verify the outcome of the first workshop, a second workshop was held with all the team members. This took place on an individual basis and interview methods²² were used. The pre-completed templates and data were shown to the participants, discussed and subsequently modified with the input of the team members. The purpose of this was to ensure that the outcome of the analysis phase was more likely to be objective and consider a wider range of aspects.²³

Finally, the SWOT revealed 13 LTSA China-relevant strategies. The strategies arising from the SWOT have been prioritized by using a scoring model²⁴ (Zangemeister/Bechmann, 1970). Consequently for the implementation, two of these strategies were selected in order to put the focus on the role of a flexible and lean organisational structures and processes.

- WO a. Flexible and lean team structure tailored for the Chinese business
- WO b. Flexible and lean processes tailored for the Chinese business

The conducted business development process allows one to define the MBA-Project overall objective horizon in more concrete terms. The completion of the project coincided with the MBA ending in August 2015. In summary, the analyses revealed two expected results (objectives) produced by MBA-Project:

- a. A flexible and lean future scenario concept for organisational structures and processes for the Siemens LTSA organisation with three expected benefits:
 - Financial cost savings
 - Increased customer satisfaction
 - Increased employee satisfaction
- b. Recommendations for adapting the LTSA China objectives and strategies including concrete actions to be taken in terms of operational excellence

21 (Lombriser & Abplanalp, 1998)

22 (Holstein & Gubrium, 1995)

23 Cf. (Nagel & et al, 2013, pp. 24 - 54)

24 Cf. (Kerth, Asum, & Stich, 2011, pp. 218-224)

3.3 FLEXIBLE AND LEAN CONCEPT FOR ORGANISATIONAL STRUCTURES AND PROCESSES

The following section aims to provide insights into the concept for flexible and lean organisational structures and processes created by the MBA-Project. The concept is based on the lean methodology and pyramidal structures for organisations. Even though this approach is in an advanced stage, there is still room for improvements.

Understanding the System and Identification of Waste

Seddon describes the following cycle “check-plan-do” as the three steps in performance improvement. The first step is the understanding of what the system does and why. Secondly, there is the discovering of the levers for change. The third step is the actions to be taken on the system.

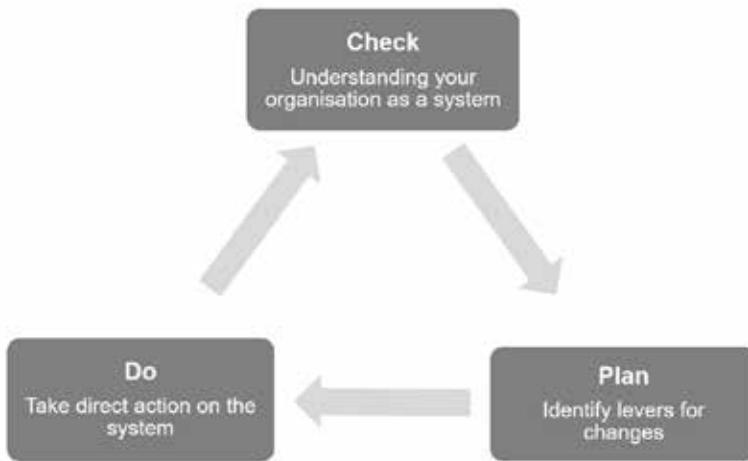


Figure 5 | Performance improvement through ‘check-plan-do’²⁵

Seddon defines questions for each step for the evaluation. The MBA-Project started its lean approach by using the question of the three step check and plan. The target is to gain an understanding of the current situation in terms of the structures and the processes from the lean perspective. In addition, this is the starting point for the future scenario concept outlined in this chapter.

The customer demand plays an important role since processes need to be tailored in this regard. The analysis of the check and plan question revealed some shortages in this regard such as the sustainable operation of machines by lower spending and effort vs. intensive cost structures. A

²⁵ (Schwappach, Own figure for master thesis, 2015) based on (Seddon, 2005, p. 101)

further customer demand is the intime outages with the flexibility for changes. This customer demand depends on their input, since when they change or slightly adapt the operation mode for the power plant (which happens frequently), it changes the date for the revision as well. According to lean theory, there should be a flow in place which uses the input from the customer to reschedule the event. A relatively generic look at the following “process” shows which activities must be carried out in order to update the system in the LTSA business at Siemens.

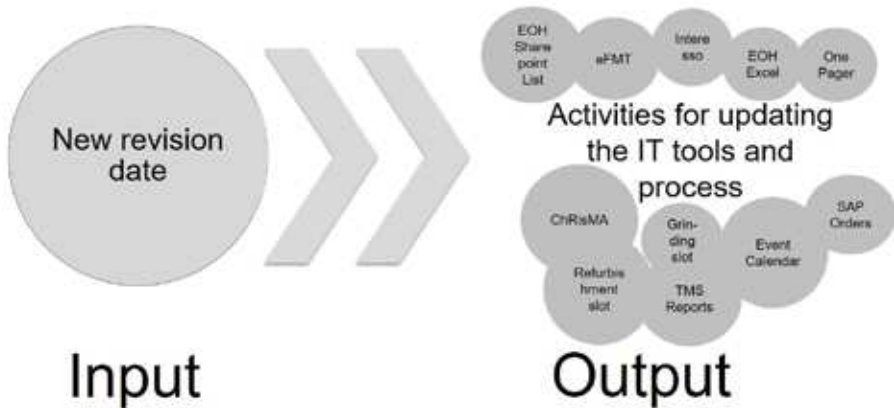


Figure 6 | Process of updating the system for new revision date²⁶

This figure illustrates the multi singular activities needed to update the IT tools and therefore the process. It is just an example, but it makes clear that there is no real process behind the customer demand of having a revision event of their GT according to his operation mode. The processes of the Siemens LTSA business are not tailored to the customer demands in terms of a process-oriented organisation, but rather they stick to the principles of project management and functionally-oriented organisation.

Lean theory seeks to focus on customer demands, avoid waste and failure and improve flow. The analysis through the check and the plan steps, as well as the outlined example of customer demand revealed several kinds of waste. There are defects through errors and misinformation, motion through unnecessary actions, no flow for customer demands, but above all there are “non-utilized skills”. According to Debashis Sarkar, the waste for “un-utilized people” or “non-utilized skills” is demonstrated by people working in the wrong job²⁷. That means, those employees are not motivated to reach their own potential. In other words, if an employee cannot make use of all of their competences to their full potential he or she will lose his intrinsic motivation, which leads

²⁶ (Schwappach, Own figure for master thesis, 2015)

²⁷ Cf. (Sarkar, 2009, p. 4)

to significant non-productivity²⁸. In the context of the LTSA Business, it can be assumed that highly qualified and certified personnel will suffer from such lack of motivation, when they have to perform a relatively high volume of secondary or organisational activities.

Overall, in terms of lean theory it is necessary to follow the customer's demands, avoid waste and create a work flow. This can be realised by supporting the intrinsic motivation through using future organisational structures with different hierarchical functions to give a clear distribution of activities. Therefore, customer demand can be satisfied, waste reduced and flow generated which will all increase the productivity. The following sections outline these ideas.

Organisational Structures

The MBA-Project has produced the following concept for the current scenario (today) vs. the future scenario for the organisational structures. The goal is to reach the future scenario. It was further developed and matured through several workshops and meetings by considering the pyramidal structures for organisations and the outcome of the previous section. The final version of the current- and future scenario structure is shown in the following figure.

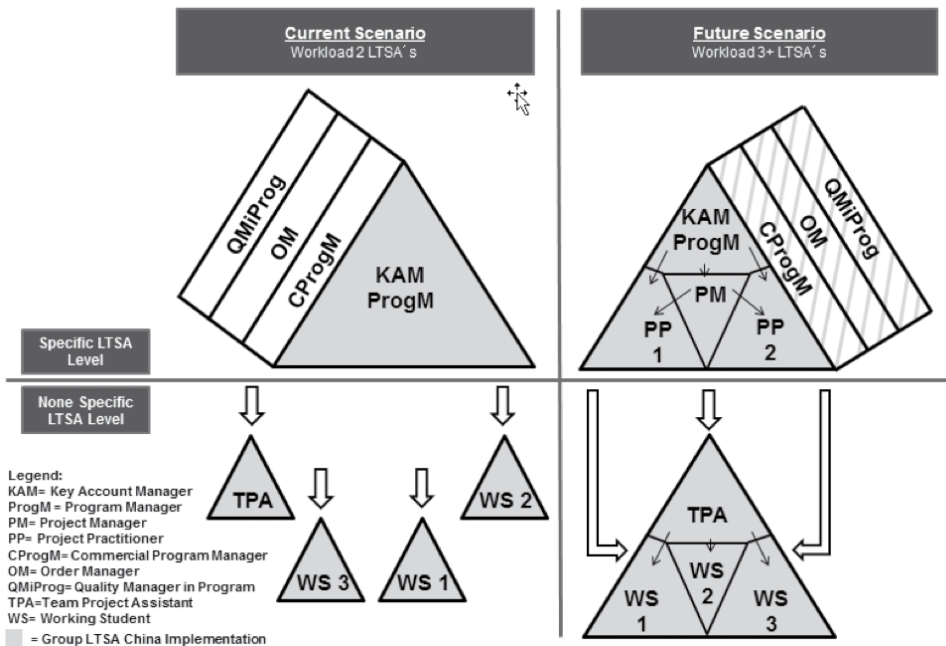


Figure 7 | Current- and future scenario organisational structure²⁹

²⁸ Cf. (Seddon, 2005, p. 116)

²⁹ (Schwappach, Own figure for master thesis, 2015)

One of the main ideas is to distinguish between the specific LTSA level assigned to specific LTSA's and the non-specific LTSA level (horizontal line). The functions marked in grey are allocated to the China LTSA Key Account and Program Manager department. It is true that in the current scenario this was already the case, but without any structure or clear assignment for the non-specific LTSA level. That means, assuming there are a lot of generic frequently repeating activities for the China LTSA's, it is useful to transfer those activities from the specific LTSA team to the non-specific LTSA level. Therefore, the Team Project Assistant (TPA) receives their instructions and orders from the Project Manager (PM) and Project Practitioner (PP) and coordinates and delegates those with the Working Students (WS) in order to make the best use of resources, capacities and competences. Of course, there is the possibility of direct communication as the arrows show too. The activities for this approach are compiled from the total LTSA's of the China implementation group under the term organisational activities.

A further significant change is the hierarchy in the upper quadrants. For the future scenario, the new structure is oriented towards a pyramidal organisation structure. Basically, there are some elements of the vertical product team structure³⁰. Until now, there are Key Account Managers (KAM) and Program Managers (ProgM). But there has been no real concept of how to support the KAM's or ProgM's in the daily business. Specifically, the KAM idea was based on the principle that these people can cover and bundle several LTSA's from one single customer in order to make the best use of synergies between the different LTSA's (it is partly contract scope for Siemens). This can be achieved by minimizing coordination efforts and optimizing spare parts scenarios, increasing and improving the (vertical) market position and having the right contact in terms of Guanxi in place for the China-specific project approval process for state owned holding companies³¹. In particular, Guanxi³² (relationship, connection and networking) should be mentioned here. It is, according to Confucius one of the most basic Chinese values, which describes the high importance of interpersonal relationships. This contrasts sharply with western values, where the dignity of the individual is dominant, as compared to Guanxi, where the big picture is more important than the individual³³. That is a fundamental difference in thinking and behaving. The conclusion of this is that it is essential and beneficial to maintain relationships and networks in China. Guanxi makes a significant contribution to the success. Therefore, it is important to have the right counterparts for each function in the customer organisation. Since the organisational structures of state-owned customers are different; it requires an appropriate adaption on Siemens side. Meanwhile, the KAM's cover the activities for the ProgM's as well. KAM's and a ProgM's can cover the same work load. If China LTSA market grows through additional LTSA's from the same customers, it will be necessary to give further support, especially to the KAM's, in order to concentrate on the overall coordination and maintenance of the customer relationship in

30 (Kotler, Keller, & Bliemel, 2007, p. 1151)

31 Cf. (Kotler, Keller, & Bliemel, 2007, pp. 799-801)

32 (Weggel, 2002, p. 33)

33 Cf. (Weggel, 2002, p. 33 ff.), cf. (Preyer & Krauß, 2009)

the Business to Business activities. Principals such as buying centre principal³⁴ or buyer-supplier relationship by the diamond³⁵ can be used for this. Further support will be realised with the functions PM and PP. The tasks to be covered by these people are the secondary activities of the KAM's and ProgM's. If possible, the PM's and PP's should work for several KAM's and ProgM's.

Besides the KAM's and ProgM's, who are responsible for the profit and loss as well as the technical leadership of the LTSA specific team level, there are the 3 LTSA core team members: Commercial Program Manager, the Order Manager and the Quality Manager in Program. These resources do not belong to the China LTSA Key Account and Program Manager department but to the specific programs. In terms of lean theory and hence a process-oriented organisation, it is recommended that the specific program teams be located in one room in order to improve the workflow initiated by customer demand. That would improve the communication (by reducing calls and emails), the LTSA specific team culture and affiliation and finally the efficiency. Further, the disciplinary lead, which is currently distributed over several departments and leads to different individual goals, should be reorganised by giving the lead to the KAM and ProgM or to those group lead. Admittedly, that idea would be somewhat impractical for LTSA's which only last two or three years. But for the LTSA's with a duration of between five and ten years, or even with renegotiation, up to twenty years, it makes sense. If no team member changes their job, they will work together for up to twenty years without sitting together and having the same individual goals. Further, the KAM's and ProgM's are in charge of many non-core activities. That probably leads to demotivation and hence waste. To reallocate the team and empower the LTSA team leaders would finally achieve the lean principal to transfer decision-making competencies and abilities to the working level³⁶ as well as the "principle of the minimum chain of command, which states that a company should choose their hierarchy with the fewest levels of authority necessary to use organizational resources efficiently and effectively"³⁷. The functional project-matrix-organisation within the Siemens LTSA organisation does not seem, from that point of view, to be the most effective one, but rather a process-oriented service organisation. However, since this suggested change of disciplinary lead will most likely meet resistance due to its radical approach oriented at the Business Process Reengineering³⁸, it has been shown with stripes in the above figure³⁹.

In summary, in order to not just increase the KAM or ProgM headcount, it is intended to hire staff with lower competence levels, such as PP and TPA, to take over secondary- and organisational activities in the future scenario. Further, a separation between LTSA specific and non-specific LTSA levels with a clear hierarchal structure is intended. Therefore, the KAM's and ProgM's can

34 (Webster & Wind, 1972)

35 (Johnston, Clark, & Shulver, 2012, p. 91 f.)

36 Cf. (Gorecki & Pautsch, 2013, pp. 31, 298)

37 (Hill & Jones, 2007, p. 416)

38 (Jones & Bouncken, 2008, pp. 263-270), (Hammer, 1990), cf. (Hammer & Champy, 1994)

39 Cf. (Gorecki & Pautsch, 2013, p. 298), cf. (Gaitanides, 2012, pp. 54-62)

concentrate on the high value work for which they are hired. Finally, it is recommended that the functional project-matrix-structure of the whole organisation should be changed into a process-oriented service organisation. That could result in more flexibility, more focus and finally higher motivation of the work force as well as increased customer satisfaction. The next section focuses on the processes and hence the activities behind the future scenario.

Processes

This section shows the procedure of the Activity Structure Analysis (ASA). The results obtained through the process analysis and derivation of measures for the future scenario concept using the example of China LTSA implementation. In order to ensure the quality of the whole approach a lean consultant provided professional help and advice.

In order to determine the core-, secondary- and organisational activities, to analyse the company organisation, increase the transparency in organisations and estimate the optimisation potential, the lean methodology tool ASA for reorganisations was identified and used. For this, the current activities of the China LTSA implementation KAM’s and ProgM’s were analysed. One workshop and one kick-off meeting were held to compile the activities and initiate the ASA tool. The following figure provides a comprehensive overview.

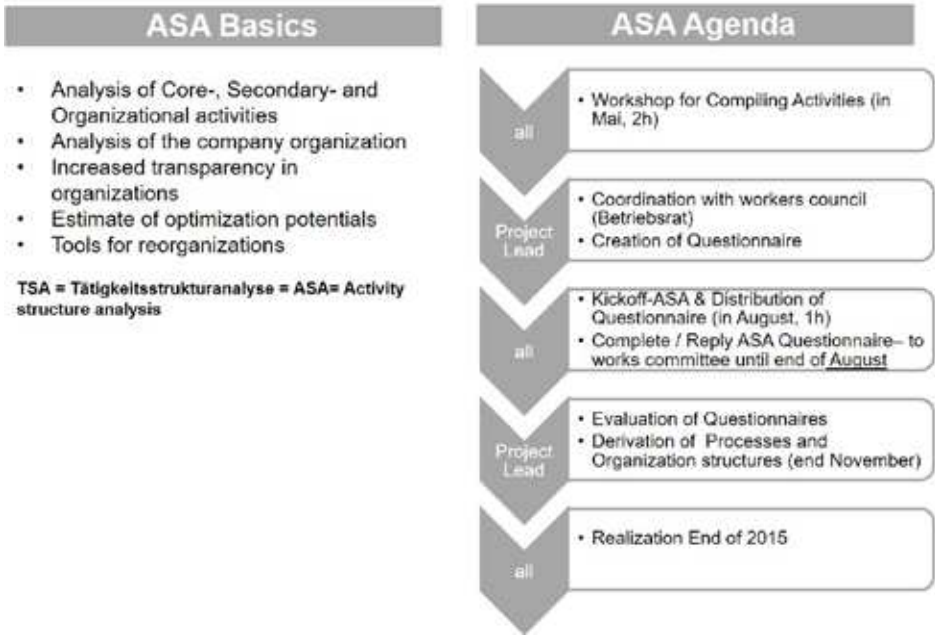


Figure 8 | Overview ASA⁴⁰

40 (Schwappach, Own figure for master thesis, 2015)

During the workshop for identifying the activities performed by the KAM's and the ProgM's in Mai 2014, 37 activities were identified and categorised. Afterwards a questionnaire was created with the following fields including the allocated activities based on a template from Siemens Lean Administration in-house training.

- Process satisfaction (Yes/No)
- Activity field (defined by first Workshop)
- Activity (defined by first Workshop)
- Resources (SAP, Excel, Telephone, etc.)
- Evaluation of efficiency of IT resources: (1 – very high, 6 – very low)
- Evaluation of efficiency of activity: (1 – very high, 6 – very low)
- Comments on efficiency / Kind of wastefulness
- Estimated number of events (per year)
- Estimated time per event (minutes)
- Calculated total time
- Comments for optimisation
- Individual comments on activities

Members of the workers' council and the team members took part in the kick-off meeting as shown in the figure above. This was held to introduce the questionnaire and discuss any misunderstandings or doubts. In order to anonymize the questionnaire the completed questionnaires were sent via the workers' council. Every questionnaire got a number, while the specific name allocated to each number remains on a separate list kept by the workers' council. Therefore it is ensured that all data is anonymous in order to avoid any connection between performance and a specific person. The evaluation and derivations for the future scenario concept and processes was conducted by the MBA-Project owner and the author in several meetings and workshops. As mentioned, the data quality is based on China LTSA implementation KAM's and ProgM's. Therefore the outcomes from the ASA could be easily distorted by single outliers. For future purposes, it is recommended to conduct the ASA with all KAM's and ProgM's of the LTSA business (approx. 87). The final outcomes of the ASA questionnaires will be used to define the flexible and lean processes. In order to make it more transparent, the results are broken down into five portions.

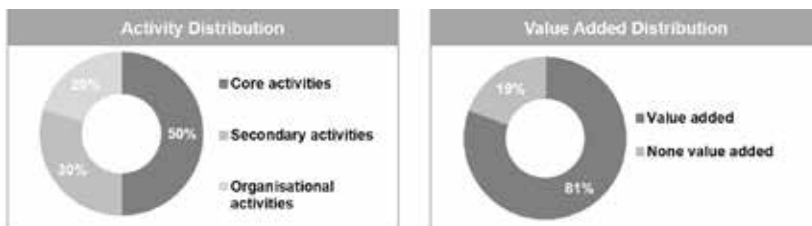


Figure 9 | Activity and value added distribution of ASA⁴¹

41 (Schwappach, Own figure for master thesis, 2015)

Figure 9 shows the most important insights gained from the questionnaire. First of all, there is a split of activities: 50% core-, 30% secondary- and 20% organisational. The core activities must still be covered by the KAM's and ProgM's. The secondary activities will be covered by the defined PM and PP and the 20% organisational activities by the TPA and WS on the non-LTSA level. In terms of hours, this means that approx. 1800 hours a year of a KAM or ProgM can be divided into 909 hours core-, 532 hours secondary- and 359 hours organisational activities. The assumption is that the duration of the activities will remain stable irrespective of which job function executes them. In terms of work load, KAM's and ProgM's could carry twice as many LTSA's (approx. 3.4). Further, 19% of activities could be identified as non-value-added. From this point of view, these activities should be avoided and removed totally from the daily business. Since those activities belong to all three categories, it would be possible to increase the efficiency of the described job functions and hence the work load in terms of LTSA per employee. This insight was used in two separate internal projects called "Stop Doing" and "Program and Project Process Light", which intends to identify activities which can be stopped. The outcome of those was open at that time. Therefore, those activities are included for further analysis.

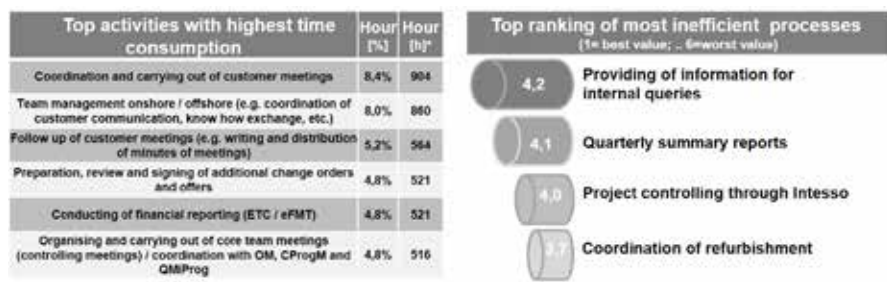
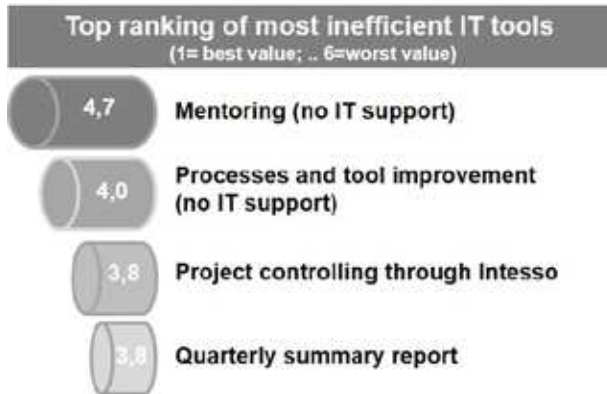


Figure 10 | Top activities with highest time consumption and top ranking of most inefficient processes⁴²

Further insights out of the ASA are the most time-consuming activities (time-eater), such as the 860 hours in total per year for the whole group that is spent in on- and offshore group coordination. In other words, a KAM or ProgM spends 8% of their time on just this activity. Slightly more time is spent on the preparation and carrying out of customer meetings. If the third activity is also taken into consideration, (which includes follow-up to the customer meeting) then 13.6% of the total time is used for customer meetings. That seems good, since spending time with the customer should be value-added. Yet, there is no specific process description or any defined procedure in place. It is recommended that this work package should be further investigated by a value stream analysis⁴³. Another result of the ASA was the identification of the most inefficient processes such as quarterly summary report or project controlling through the IT tool "Interesso". Those insights were also used for "Stop Doing and "Program and Project Process Light" initiatives.

42 (Schwappach, Own figure for master thesis, 2015)

43 Cf. (Gorecki & Pautsch, 2013)

Figure 11 | Top ranking of most inefficient IT tools⁴⁴

In addition to the most inefficient processes, these are the corresponding outcomes for the most inefficient IT tools such as the quarterly summary report or project controlling through the IT tool “Interesso”.

In summary, there are many insights gained through the ASA which could be used in order to improve the processes. The most important are the 50% core-, 30% secondary- and 20% organisational activity distribution since those will define the work volume for the future scenario concept as described in this section. Further, there would be a reduction in the effort and duplicated or wasted work, if the suggestions were followed by the whole organisation through, for example, “Stop Doing” and “Program and Project Process Light”. As a result, the activities should be carried out more effectively and the cost-efficiency ratio should be increased for the future scenario.

The financial consideration of the concept is not outlined.

Roll-Out

In order to conduct one of the first steps of the WBS, gaining the support of the middle management and therefore the required resources for the implementation of the flexible and lean concept for the pilot project in the China LTSA implementation group, the concept was suggested via a Siemens internal idea system. In this, the benefits for the whole organisation were pointed out in terms of a complete roll out over the organisation. The management has shown its interest as well as the intention to follow up the concept. However, the current business situation, as described in the introduction chapter hinders a prompt pilot roll-out. Yet, the suggested future sce-

⁴⁴ (Schwappach, Own figure for master thesis, 2015)

nario concept could provide exactly the right answer. Finally, an incremental roll out was chosen. First results in terms of staff hiring and activity redistribution could be achieved.

3.4 INTERACTION WITH BUSINESS DEVELOPMENT

The Objectives and Strategy section revealed these two strategies by applying the business development process at the beginning of the project.

- WO a. Flexible and lean team structure tailored for the Chinese business
- WO b. Flexible and lean processes tailored for the Chinese business

Those have been used for the previously-outlined concept. But in general, a blind and autocratic implementation of operational concept is not to be recommended. On the contrary, a regular strategic cycle should be common practice, in order to align strategies with operational concepts and the other way around⁴⁵. Both strategies and operational concepts influence each other, which fact should be considered by both sides. Hence, structure follows strategy, but also “strategy follows structure”⁴⁶, as revealed by Jr. Alfred D. Chandler. However, there are several other models such as the 5 stages closed-loop management system⁴⁷ described by Robert S. Kaplan and David P. Norton that provide this idea from a process point of view. This MBA-Project does not aim to answer or to discuss this approach (which comes first, strategy or structure?) in detail, but rather to consider it. In summary, the main outcome of the first business development processes in 2013 was that the China LTSA business should make the best use of flexible and lean structures and processes. The next step is to test and validate whether the created concept of the above mentioned strategies fits into the current business situation and what must be considered alongside it.⁴⁸

A second run of the business development process with a comprehensive analysis of the Siemens corporate objectives and strategies, a balance score card and a SWOT for the objectives and strategies of Siemens China LTSA implementation business, a ranking through a Scoring model and finally an expert interview were conducted. All in all, twelve strategies were identified, of which three focus on operational excellence, such as lean methodology and implementing the concept. Those should be favoured. Furthermore, there are specific Chinese market characteristics and success factors such as Guanxi which should be fulfilled by related strategies such as Key Account Management.

45 Cf. (Johnston, Clark, & Shulver, 2012, p. 400)

46 (Nagel & et al, 2013, p. 163)

47 (Kaplan & Norton, 2008, pp. 62–77)

48 Cf. (Johnston, Clark, & Shulver, 2012, pp. 368–407)

- a. WO a. Using lean and flexible organisational structures and processes tailored for the Chinese business by diversified job disciplines and tailored activities
- b. WT b. The introduction of (own) lean service philosophy with qualification and processes instead of project management perfectionism
- c. WO b. The introduction of continuous improvement process and failure acceptance culture by considering change & innovation management

Regarding the strategic interactions between the business development and the concept for flexible and lean organisational structures and processes, the interactions can be summarised by the need for the future scenario concept in order to support the Chinese LTSA market-specific strategies demands such as Key Account Management and to meet the Siemens corporate objectives and strategies; meanwhile the concept needs objectives and strategies that are relevant for operational excellence on an organisational level to provide the required framework for the implementation. Therefore, the first step is to establish and introduce the relevant objectives and strategies.

4 RESUME

4.1 SUMMARY AND OUTLOOK FOR THE CONCEPT

The flexible and lean concept for organisational structures and processes has been developed from an idea into a tangible future scenario. Through models such as the pyramid structure for organisations and the lean tool ASA, a complete approach was created. A ramp up of LTSA's is required in order to roll out the full potential of the future scenario concept for the China LTSA Implementation group with yearly cost savings of up to 21% by 2018. For the calculation, the assumptions consider elements such as LTSA amount increase, wages, training costs, business travels costs, collective increases to wages and salaries as well as the activity split according to the current vs. future scenario as revealed by the ASA. It is important to consider that the ASA must be conducted for the whole organization in order to validate the outcome over the activity split. Further, it can be estimated, that increased customer- and employee- satisfaction can be achieved by the reduction of non-value added activities and maintained motivation of the work force by meeting the individual competency level of each employee. That should bring further financial benefits which have not yet been considered in the cost saving calculation of the future scenario concept. Hence, the customer demand is brought back into the focus; the competitiveness of the Siemens LTSA business will be positively influenced by the benefits already mentioned. In order to measure the following factors: financial cost savings, customer- and employee satisfaction, it is recommended to set up a key performance indicator system with the following variables for the implementation.

- Fixed costs (as described) savings between current and future scenario >10%
- Increased customer satisfaction by NPS >36 % or at least no detractor
- Increased employee satisfaction for engagement >30% and operational excellence and leadership >45%

Those figures should be measured on a regular basis. Although the “soft” results for increased customer and employee satisfaction can be measured by the factors mentioned, they can still be influenced by many other different factors, which make a precise correlation uncertain. Nevertheless, the expected improvements as outlined should be realistic. A further benefit, which has not yet been outlined, is that the described concept would enable the company to hire less-skilled people. Through competence management their skills can be developed in-house. That would be an excellent opportunity to continue to improve the concept through the creation of a competence model and a development plan for each job function.

The interest of the middle management underlines the approach. In any case, a clear roll-out is being prevented by the current situation. However, according to McKinsey & Company’s article “Maintaining a long-term view during turnarounds” avoiding cuts in the affected business areas shall be maintained as long as possible in order to be flexible as well as keeping the motivation and the skills on board⁴⁹. Therefore, creating the long-term results must be the focus followed by a vision and road map. The future concept presented could be part of this vision by giving the right answer as to how to operate on the level of operational excellence. Overall, operational excellence defines a program, not just headcount reductions, which targets the improvement of processes to meet customer demands, quality and efficiency by using methodology such as quality management, lean theory, leadership, team work and improvement management⁵⁰. The first steps for the roll out were done by following an incremental change.

4.2 GENERALISATION AND FUTURE PERSPECTIVE

The proverb used at the start of this description points out that it is necessary to find and try out new ways, otherwise it could easily lead to one walking in the same old ways. This MBA-Project follows-up this philosophy by giving an answer to the new ways and how to walk on them. A proverb from the Chinese philosopher Lao Tse is: “The journey of a thousand miles begins with one step”⁵¹. For a future perspective, that means that having taken one step along a new path, the next step should be taken along the same new path.

49 Cf. (Carmody, Davies, & Yakola, 2015)

50 Cf. (OECplus, n.d.)

51 (Hochschule Ludwigshafen am Rhein, 2014)

As a general comment, it can be seen that operational excellence seems to be a topic outside the focus of an industry service organisation. The reason for this might be that, for instance, the LTSA business was almost free from competition and since when a customer bought a GT from one of the OEM's they were virtually bound to this manufacturer. Therefore, competition was mostly related to the production business unit for selling new components. But the situation has changed recently. Non-OEM's and prior joint-venture partners are now attacking the service business directly. There are several parallels to infrastructural technologies such as the railways in the middle of the 19th century with rapid installation, massive investment and exponential capacity increase followed by extreme price declines, increased competition and finally commoditisation⁵². Another aspect regarding competition is the limitation of personnel and competencies also called „War of Talents“⁵³. Advanced concepts for organisational structures and processes could bring more flexibility and reduce pressure on enterprises to hire highly-qualified employees through competence development and management⁵⁴. Therefore, the concept, as described, can be applied, to the whole LTSA implementation organisation and even further to other service business units. Clearly, another fact will be that operational excellence is considered more relevant for manufacturing (through concepts such as lean production) than for the service business⁵⁵. The increased competition will force service businesses to spend more effort on business development than before, which should lead to an increased focus on operational excellence as well, since some market-specific objectives and strategies can only be implemented if the internal set-up, such as organisational structures and processes, is the right one. Hence, the basis is to have objectives and strategies in place. Without these, there will probably not be any improvement and progress in this regard. Lean service management can contribute in general the relevant success factor to the service businesses in order for the business to compete effectively and efficiently⁵⁶. The Chinese specific market demands such as Key Account Management due to Guanxi can be transferred to other regions with similar GT volumes and customer structures such as the region Middle East. In terms of a broader context hypotheses or general principle generated from the China Siemens LTSA specific case to other industry services it can be pointed out:

Increased competition in industry services, through e.g. commoditisation and lack of competent personnel, should lead to an enhanced focus on operational excellence by introducing the related objectives and strategies in order to reveal and provide the framework conditions for concepts of advanced organisational structures and processes based on the methodology of lean service; while specific market demands constitute a catalyst.

52 Cf. (Carr, 2003, pp. 41-49)

53 (Faix & Auer, 2009, p. 383 f.)

54 Cf. (Faix & Auer, 2009, pp. 13-89), cf. (Jochmann & Gechter, 2007)

55 Cf. (Allied Consultants Europe (ed.), 2011), cf. (Johnston, Clark, & Shulver, 2012)

56 Cf. (BCG, 2008, p. 1)

APPENDIX

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LIST OF FIGURES

- Figure 1 | Example of a Siemens gas turbine SGT5-4000F
- Figure 2 | Process of change
- Figure 3 | WBS of MBA-Project
- Figure 4 | Strategic triangle of business development process
- Figure 5 | Performance improvement through 'check-plan-do'
- Figure 6 | Process of updating the system for new revision date
- Figure 7 | Current- and future scenario organisational structure
- Figure 8 | Overview ASA
- Figure 9 | Activity and value added distribution of ASA
- Figure 10 | Top activities with highest time consumption and top ranking of most inefficient processes
- Figure 11 | Top ranking of most inefficient IT tools

LIST OF ABBREVIATIONS

ASA	Activity Structure Analysis
GT	Gas Turbine
KAM	Key Account Manager
LTSA	Long Terms Service Agreement
OEM	Original Equipment Manufacturer
PM	Project Manager
PP	Project Practitioner
ProgM	Program Manager
WBS	Work Break-Down Structure
WO	Weaknesses / Opportunities Strategy from SWOT
WS	Working Student
WT	vWeaknesses / Threats Strategy from SWOT

